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Group of Experts on Energy Efficiency
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Kiev, 13–15 November 2018
Item 6 of the provisional agenda
Regulatory and policy dialogue addressing barriers to improve energy efficiency and renewable energy

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Background paper on progress in the areas of energy efficiency and renewable energy in selected countries of South-Eastern Europe, Eastern Europe, and Central Asia, and in Russian Federation

Note by the secretariat

I. Background information

1. A number of legislative, policy, economic, and financial barriers to significant improvements in energy efficiency and increased uptake of renewable energy remain. It is important to identify policies and measures that reduce barriers to increasing investment and financing flows to energy efficiency and renewable energy projects, with an emphasis on commercial projects and private financing. A valuable aspect is transferability of successful measures in selected countries to other United Nations Economic Commission for Europe (ECE) member States. Particular attention needs to be given to the reasons why energy efficiency improvement and uptake of renewable energy are lagging behind what is necessary to achieve climate objectives and sustainable development goals.

2. In the period of 2007–2014, ECE was executing project Financing Energy Efficiency and Renewable Energy Investments for Climate Change Mitigation. The long-

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term objective of the project was to promote an investment climate in which self-sustaining energy efficiency and renewable energy projects can be identified, developed, financed and implemented. The project achieved most of its objectives and the final project report has been prepared. It provided a basis for the analysis of developments occurred in the beneficiary countries in the period from 2010 to present days. This background paper presents main findings and outcomes of the final report of the project.

II. Main objectives and methodology of the report

3. The report looks at policy, regulatory and institutional reforms; capacity of stakeholders in the countries; best practices developed and introduced; and awareness raising aimed at improving investments into energy efficiency and renewable energy. It also looks at the processes in the area of energy efficiency and renewable energy, which are particularly beneficial for the countries and can be recommended for replication and scaling up. It highlights the existing gaps related to energy efficiency and renewable energy in the areas of policy, regulatory and institutional frameworks, financial environment, and education and awareness.

4. The geographic focus of the report is selected ECE member States from South-Eastern Europe, Eastern Europe, and Central Asia, which were beneficiary countries of the project mentioned in para. 2. These are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Serbia, and the former Yugoslav Republic of Macedonia (South-Eastern Europe), Belarus, Republic of Moldova, and Ukraine (Eastern Europe), Kazakhstan (Central Asia), and Russian Federation.

5. The survey on progress in the areas of energy efficiency and renewable energy since 2010 in the selected countries was conducted over the period of 1 March – 30 April 2018. It was addressed to the responsible authorities for energy efficiency and renewable energy in these countries. The survey was made available in English and Russian. Evaluation of responses from the countries was complemented by a desk research to assess overall progress in the areas of energy efficiency and renewable energy in the selected countries.

III. Progress in the policy area to promote energy efficiency and renewable energy

6. According to the study, most of the countries have adopted the dedicated framework legislation on energy efficiency and renewable energy. Since 2010, legislation on energy efficiency and energy saving has been adopted in Albania (2015), Belarus (2015), Bosnia and Herzegovina (both in Federation of Bosnia and Herzegovina and in Republika Srpska in 2013), Bulgaria (2016), Croatia (2014), Kazakhstan (2014), Republic of Moldova (2010), Russian Federation (2009 with latest amendment in 2014), Serbia (2013), and Ukraine (2017).

7. The laws on renewable energy have been adopted in Albania (2017), Belarus (2010), Bosnia and Herzegovina (in both entities in 2013), Bulgaria (2011, amended in 2017), Croatia (2015, amended in 2017), Kazakhstan (2013), Republic of Moldova (2016, amended in 2017), and Ukraine (2003 with the latest amendment in 2017).

8. The Energy Development Strategies until 2030 have been developed and adopted in Albania (2018), Bosnia and Herzegovina (Republika Srpska in 2012), Bulgaria (2011), Croatia (draft of 2017), Republic of Moldova (2013), Russian Federation (2009), Ukraine (2017), and the former Yugoslav Republic of Macedonia (2010).

9. The National Energy Efficiency Action Plans (NEEAP) have been developed in Albania (2017), Bosnia and Herzegovina (Federation of Bosnia and Herzegovina in 2017), Bulgaria (fourth NEEAP adopted in 2017), Croatia (fourth NEEAP adopted in 2017), Republic of Moldova (second NEEAP adopted in 2016), Serbia (third NEEAP adopted in 2016), Ukraine (2015), and the former Yugoslav Republic of Macedonia (second NEEAP adopted in 2017).

10. The National Renewable Energy Action Plans (NREAP) have been developed in Albania (2016), Bosnia and Herzegovina (Federation of Bosnia and Herzegovina in 2014), Bulgaria (2012), Croatia (2013), Kazakhstan (2013), Republic of Moldova (2013), Serbia (2013), Ukraine (2014), and the former Yugoslav Republic of Macedonia (2015, amended in 2017).

11. Development of the secondary legislation was boosted in all selected countries since 2010. Comprised of various types of by-laws produced by different governmental bodies, the adopted secondary legislation includes Presidential decrees, Governmental resolutions and decrees, resolutions of National Commissions, rulebooks, ordinances, regulations, specific decisions and rules. Norms, standards and technical regulations are completing the regulatory framework related to energy efficiency and renewable energy in the countries.

12. The institutional framework is formed by the institutions at the national and local levels acting in the areas of energy efficiency and renewable energy in the selected countries. The energy agencies are established in Albania, Bulgaria, Croatia, Republic of Moldova, Russian Federation, Ukraine, and the former Yugoslav Republic of Macedonia.

IV. Progress in building capacity to promote energy efficiency and renewable energy investments

13. The study indicates that the countries enhanced capacity of stakeholders in different sectors. The activities which helped improving capacity of authorities in the public sector included organization of trainings of staff in the ministries, governmental agencies and municipalities; conferences on energy efficiency and renewable energy policies and project development. international fora on sharing knowledge and experiences in energy efficiency and renewable energy areas; licensing programmes for engineers; trainings on energy management; as well as knowledge transfers among managers at the middle and senior levels.

14. The capacity building activities for stakeholders in utilities, energy service companies (ESCOs), consulting firms, and energy audit companies, among others, included trainings on energy efficiency and renewable energy for energy producing and consulting companies; explanation of regulations and procedures for ESCOs; introduction of the management system and standards for consulting companies; as well as international exhibitions and fora for introduction of the eco-friendly technologies.

15. The activities that helped the end-users included development of the support programmes for financing in industry and residential sector; introduction of energy management process in the residential system; adoption of programmes for energy renovation of single-family houses and multi-apartment buildings; organization of international conferences to promote energy efficiency measures and use of renewable energy.

16. The activities, which enhanced capacity for energy efficiency and renewable energy investments within the financial services, included dissemination of information on the available international technical assistance programmes for energy efficiency and renewable energy projects; dissemination of information on possibilities for commercial

and non-commercial project financing; transfer of know-how and thematic expertise among bigger banking groups; technical assistance for project development and financing for financial service companies and project developers; and organization of various capacity building events.

V. Progress in developing and introducing best practices to energy efficiency and renewable energy investments

17. Implementing effective policies and measures plays important role in better realizing the potential of energy efficiency and uptake of renewable energy in the countries. The best policy practices in the countries under review can be seen in adoption of relevant energy efficiency and renewable energy regulations and establishing institutional structures based on the territorial-sectoral principle; adoption and update of the national energy efficiency and renewable energy action plans; establishment of energy efficiency funds for financing of programmes and projects in the area of energy efficiency and renewable energy; introduction of energy management systems; and establishing the feed-in support schemes for renewable energy and ESCO contracts in the public sector.

18. The best practices in project development, among others, include carrying out the energy audits, introduction of feed-in tariffs for electricity generation from the renewable energy installations; operation of energy efficiency co-financing programmes; operation of the budgetary fund for energy efficiency; introduction of support schemes for installation of solar water heaters, replacement of windows, and other energy efficiency and renewable energy measures.

19. The best approaches to investments into energy efficiency and renewable energy in the selected countries were the adoption of by-laws to support the investments; establishment of national energy efficiency and renewable energy funds; implementation of co-financing options for promoting energy efficiency investments; and introduction of the auction system as a renewable energy support mechanism.

VI. Progress in energy efficiency and renewable energy project development and financing

20. Initiatives by governments in the countries are identified in adoption and implementation of the state programmes and establishment of specialized funds, such as the State Programme "Energy Saving" in Belarus; Environmental Protection and Energy Efficiency Fund of the Republika Srpska and Environmental Fund of the Federation of Bosnia and Herzegovina (both in Bosnia and Herzegovina); the Environmental Protection and Energy Efficiency Fund in Croatia; the State Programme "Energy Efficiency and Energy Development" in the Russian Federation; Energy Efficiency Budgetary Fund in Serbia; and the support scheme for installation of solar water heaters by the Ministry of Economy in the former Yugoslav Republic of Macedonia.

21. Among the existing financing schemes and mechanisms, the countries established funds of the national and local budgets, introduced special environmental fee on registration of motor vehicles, are using the structural funds of the European Union for stimulating energy efficiency and renewable energy projects, introduced the "green tariffs", and provided tax incentives.

22. Various instruments were used for financing of energy efficiency and renewable energy projects. They vary, for example, from credit financing and loans in Belarus and Bosnia and Herzegovina to grants in Ukraine and the former Yugoslav Republic of

Macedonia. Commercial loans through local banks and microcredit foundations in Bosnia and Herzegovina offer the end-users more favorable terms (lower interest rates) than standard commercial loans.

23. Technical assistance for project financing is usually provided through allocation of grant funds to bring viable energy efficiency and renewable energy projects to bankability to enable financing from domestic and international financial institutions, development banks, commercial banks and other sources of debt or equity financing. The World Bank, United Nations Development Programme (UNDP), International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD), European Union (EU), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), United States Agency for International Development (USAID), European Investment Bank (EIB), Kreditanstalt für Wiederaufbau (KfW), and Global Environment Facility (GEF) are among the most active international institutions providing technical assistance in these countries. International donors and development banks continue to be an important source of debt financing and grants for energy efficiency and renewable energy projects.

24. The development of the energy service market in the countries varies significantly. The ESCO market is in the development or initial phase in Belarus, Bosnia and Herzegovina, and the former Yugoslav Republic of Macedonia, while being more developed in Croatia, Russian Federation, Serbia, and Ukraine.

VII. Processes in the area of energy efficiency and renewable energy beneficial for the countries

25. The study also looks at the processes led by ECE and other United Nations Regional Commissions in the area of energy efficiency and renewable energy, which are particularly beneficial for the countries and can be recommended for replication and scaling up. The identified processes include several internationally implemented projects, conducted events and prepared publications in the period of 2012-2017.

26. The project "Promoting Energy Efficiency Investments for Climate Change Mitigation and Sustainable Development", implemented by ECE (lead agency) in collaboration with the other United Nations Regional Commissions (Economic and Social Commission for Asia and the Pacific (ESCAP), Economic and Social Commission for Western Asia (ESCWA), Economic Commission for Africa (ECA), and Economic and Social Commission for Latin America and the Caribbean (ECLAC)) in 2012-2014, conducted several workshops and other capacity building activities. The project combined technical assistance in design and implementation of investment projects, advice on policy and institutional reforms, and direct links with financial institutions (banks and investment funds) to establish mechanisms, which were able to fast-track the development of self-sustained markets for energy efficiency.

27. The project "Promoting Renewable Energy Investments for Climate Change Mitigation and Sustainable Development", implemented by ESCWA (lead agency) in collaboration with ECE in 2015-2017, conducted trainings of experts at the national and municipal levels in project development, finance and business; developed case studies on experience of policy reforms in the countries; developed an investment project pipeline and provided further assistance to project developers.

28. The project "Energy Efficiency Standards in Buildings in the UNECE Region", under joint implementation by the Sustainable Energy Division and Forests, Housing and Land Management Division of ECE in 2017-2018, is focused on improving energy efficiency in buildings and reducing global greenhouse gas emissions from buildings in the

ECE region through improved knowledge of policy makers and building sector professionals in application of high-performance energy efficiency building standards.

29. The annual International Forum on Energy for Sustainable Development, organized since 2010, has made major contributions to the global dialogue on implementing the Sustainable Energy for All initiative and achieving targets of the Sustainable Development Goal (SDG) 7 on affordable and clean energy.

30. In 2014, the ECE Group of Experts on Energy Efficiency was established with mandate to carry out activities that help significantly improve energy efficiency in the region, including, in the selected countries. Also in 2014, the ECE Group of Experts on Renewable Energy was established and mandated to carry out activities that help significantly increase the uptake of renewable energy in the region and help achieve the objective of access to energy for all in the ECE region.

31. Renewable Energy Hard Talks have been organized within GERE work in member States (Georgia, Ukraine, Azerbaijan and Kazakhstan in 2017-2018) on new possibilities for developing sustainable energy and promoting renewable energy investments. The Hard Talks promote demand-driven debate directly in the countries on what is needed to change to allow the private sector to invest in sustainable energy and substantially increase the uptake of renewable energy. In the framework of the International Forum on Energy for Sustainable Development, a dedicated Matchmaking event has been organized since 2016 to promote renewable energy investments.

32. A number of analytical policy studies to assess the progress in energy efficiency and renewable energy policies and investments have been prepared, namely:

- Analysis of National Case Studies on Policy Reforms to Promote Energy Efficiency Investments (2015)
- Best Policy Practices for Promoting Energy Efficiency (two editions, 2015 and 2017)
- UNECE Renewable Energy Status Report (two editions, 2015 and 2017)
- Experience in the Europe and CIS Region with Clean Energy – UNDP, GEF and UNECE (2016)
- Overcoming Barriers to Investing in Energy Efficiency (2017)
- Global Tracking Framework: UNECE Progress in Sustainable Energy (2017)
- Status and Perspectives for Renewable Energy Development in the UNECE Region 2017 (2018)

VIII. Remaining gaps related to energy efficiency and renewable energy in the countries

33. The study highlights the existing gaps related to energy efficiency and renewable energy in the areas of policy, regulatory and institutional frameworks, and financial environment.

34. In the policy area, the framework legislation on energy efficiency is not adopted in the former Yugoslav Republic of Macedonia. The legislation on renewable energy does not exist in the Russian Federation, Serbia, and the former Yugoslav Republic of Macedonia. Energy development strategies have not been adopted in Belarus, Kazakhstan, and Serbia. Some project countries also do not have National Energy Efficiency and Renewable Energy Action Plans. NEEAP has not been adopted in Belarus, Kazakhstan, and Russian

Federation. NREAP has not been adopted in the Russian Federation. Secondary legislation is far less developed and adopted in the project countries. Development of the dedicated secondary legislation needs more attention and further actions from the policy makers' side.

35. The governmental institutions responsible for energy efficiency and renewable energy in the reviewed countries are mostly represented only at the national level. Even when local institutions exist they are often not functioning effectively. The dedicated agencies and intermediate management structures that deal with energy efficiency and renewable energy have not been established in Bosnia and Herzegovina, Kazakhstan, and Serbia.

36. The financial environment for investments in energy efficiency projects remains risky due to low energy tariffs and energy subsidies in many countries, which do not provide investors with attractive rates of return on their investments.

37. To promote investments in renewable energy, some countries introduced feed-in tariffs or premiums. However, official expansion goals were not introduced in Belarus. Investment incentives, subsidies and benefits do not exist in the Republic of Moldova. Green certificates are not present in any of the reviewed countries. Auctions are introduced only in the Russian Federation. Renewables portfolio standards or quota system exists only in Belarus. Guaranteed grid access for electricity generated from renewable energy sources exists only in a few countries. None of the countries have net metering and net billing.

38. Commercial financing lacks incentives, while the investments in the countries are mainly driven by international donors and development banks in the form of debt financing or grants from the World Bank, EBRD, and KfW. The important lenders for countries in South-Eastern Europe are also the European Commission, the Council of Europe Development Bank, and EIB.

IX. Conclusions and recommendations on policies and actions to increase financing into energy efficiency and renewable energy

39. The study examined policy, regulatory and institutional reforms to promote energy efficiency and renewable energy in the selected countries. Bulgaria and Croatia, as members of the European Union, were required to transpose the EU Directives' provisions into their national laws to ensure major energy savings for both consumers and industry. Albania, Bosnia and Herzegovina, Republic of Moldova, Serbia, Ukraine and the former Yugoslav Republic of Macedonia are the contracting parties of the Energy Community and made legally binding commitments to adopt the EU energy legislation which boosted the development of policy, legislative and regulatory frameworks in these countries. Belarus, Kazakhstan and the Russian Federation also achieved significant progress in the areas of energy efficiency and renewable energy since 2010.

40. The countries also made progress in the capacity building process to promote energy efficiency and renewable energy investments. National and local authorities, project developers and owners as well as financial institutions gained knowledge about new technologies, new financial instruments and ways of attracting investments in energy efficiency and renewable energy. The capacities of public institutions and the private sector in development of energy efficiency and renewable energy projects were increased from financial assessment and bankability conditions point of view.

41. Since 2010, the countries developed and introduced certain best policy practices and practices in project development, best approaches to investments into energy efficiency and renewable energy and innovative financing mechanisms that allowed increasing

investments into the areas. The existing processes in the area of energy efficiency and renewable energy, including implementation of the international projects, organization of events and conduct of research also facilitated the countries' progress in the areas of energy efficiency and renewable energy.

42. Despite achieved progress, the study also highlighted existing gaps related to energy efficiency and renewable energy in the areas of policy, regulatory and institutional frameworks, and financial environment, and education and awareness in the countries. To address the existing gaps, the study proposes the following recommendations:

- National Energy Efficiency Action Plans should be adopted in those countries that have not done so yet (Belarus, Kazakhstan, and the Russian Federation). A National Renewable Energy Action Plan should be adopted in the Russian Federation.
- Policy makers from the selected countries should focus more on development and subsequent enforcement of the secondary legislation on energy efficiency and renewable energy.
- Development and implementation of policies related to energy efficiency and renewable energy should be coordinated at the national, regional (provincial), and local levels. Absence of such coordination often leads to ineffectiveness of the adopted policies in the countries.
- All relevant stakeholders (policy makers, business community, financial institutions, academia, and civil society) should be brought into the process of formulation of energy efficiency and renewable energy policies. This would help in developing consensus and facilitating future implementation of policies.
- The ongoing nature of policy development requires consistent and sustained introduction of new measures and their constant improvement. To achieve the national targets, the governments should introduce new regulations, update the existing ones and constantly monitor their implementation.
- In order to be effective, energy efficiency and renewable energy related policies should be predictable and consistent in the long term. They also have to be aligned with the existing energy market structure and coordinated with other existing policies.
- The dedicated governmental institutions or agencies should be created in those countries where they do not exist yet to ensure implementation of energy policy in the country, improvements in energy efficiency, and increased uptake of renewable energy.
- Further work needs to be done to improve investment climate for energy efficiency and renewable energy projects. Efforts to attract investments in this area should become a special focus for governments.
- The countries should concentrate more on introducing incentives (financial and non-financial) and supporting schemes for energy efficiency and renewable energy investments.
- Energy subsidies should be eliminated in the countries (while ensuring that the level of energy poverty does not increase, and that vulnerable population has access to affordable and clean energy) as they discourage energy efficiency and renewable energy investments and do not provide investors with the opportunity to receive expected rate of return on their investments.

- Additional efforts should be made in the countries to reduce perception of the commercial financial institutions that financing of energy efficiency and renewable energy projects carry high risks.
- Awareness raising should be one of the priorities for the national authorities to avoid obstacles to promoting energy efficiency and renewable energy.
- Information exchange activities and trainings should become an integral part of energy efficiency and renewable energy development strategies.
- The international development agencies working in the countries can provide significant benefits through supporting activities aimed at increasing public awareness of energy efficiency measures and use of renewable energy sources through public campaigns and pilot projects.